

IDAHO DEPARTMENT OF FISH & GAME

Jerry M. Conley, Director

FEDERAL AID TO FISH AND WILDLIFE RESTORATION

Job Performance Report

Project F-73-R-2

Fishery Research



SUBPROJECT II: ANNUAL SURVEY OF THE SALMON AND STEELHEAD SPORT FISHERY HARVEST
IN IDAHO

Study I. Estimates of the 1979 Harvest of Salmon and
Steelhead (Survey)

Period Covered: 1 March 1979 to 29 February 1980 by

David W. Ortmann
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August, 1980

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JOB PERFORMANCE REPORT

State of Idaho

Project No. F-73-R-2

Subproject No. II

Study I

Name: ANNUAL SURVEY OF THE SALMON
AND STEELHEAD SPORT FISHERY
HARVEST IN IDAHO

Title: Estimates of the 1979 Harvest
of Salmon and Steelhead (Survey)

Period Covered: 1 March 1979 to 29 February 1980

ABSTRACT

The run of chinook salmon to Idaho in 1979 was below spawning and fishery requirements; therefore, no fishing season was provided.

The steelhead fishery was structured to target harvests upon fish returning to Dworshak National Fish Hatchery and Pahsimeroi Hatchery. An estimated 9,787 anglers fished 50,271 days to catch 5,667 steelhead. The catch was the third smallest of record.

Author:

David W. Ortmann
Anadromous Fishery Manager

RECOMMENDATIONS

Continue the annual survey of salmon and steelhead harvests.

Field personnel should continue contacting anglers on the Snake, Salmon and Clearwater Rivers to insure accurate recording of stream sections on salmon and steelhead permits.

OBJECTIVES

To estimate the 1979 salmon and steelhead harvest in Idaho.

TECHNIQUES USED

Salmon Catch Survey

The chinook salmon run to Idaho was the all-time record low in 1979, with only 7,525 fish counted over Lower Granite Dam. Consequently, no open season for salmon fishing was provided.

Steelhead Catch Survey

Consumptive fishing for steelhead in the spring of 1979 was permitted on the Clearwater River, the North Fork Clearwater River, and on a portion of the upper Salmon River. Regulations were structured to target the fishery on stocks of fish returning to Dworshak National Fish Hatchery and Pahsimeroi Hatchery (Fig. 1).

In the fall of 1979 the consumptive fishery was confined to the Salmon River and a portion of the Snake River. Fishing in the Clearwater River was restricted to catch-and-release. These regulations were designed to target the fishery on the Pahsimeroi Hatchery stock (Fig. 2).

The steelhead catch survey was conducted to be comparable to past years. The survey began following expiration of the 1979 calendar year steelhead fishing permits.

We established a random sample of 4,584 (35%) of the 13,078 steelhead permit holders. Questionnaires were sent to permit holders in the sample who had not previously returned their permits to the Department of Fish and Game. After about a one-month waiting period a second request for the return of information was sent to nonrespondents, which numbered 2,069.

Recipients of the questionnaires were asked to return their permits (Fig. 3) or a duplicate permit provided on the questionnaire (Fig. 4 and 5).

We also asked anglers to record the number of days they fished in each of the major river systems for steelhead. Informational maps were supplied with the questionnaires to assist anglers in accurately recording river sections from which fish were caught (Fig. 6).

Catches by date, stream, residency of angler and number of days fished were compiled by machine sorting. Data for catch-and-release fishing on the Clearwater River in the fall of 1979 were sorted by hand.

FINDINGS

Steelhead Catch Estimate's

A total of 13,078 steelhead permits were issued in 1979. About 75% of the permit holders, or 9,787 persons, indicated that they had actually fished for steelhead. Thirty-two percent of those actually fishing caught and killed at least one steelhead and the total catch was estimated at 5,667. The average catch for the year was 0.58 steelhead per angler (Table 1).

The catches by major stream area were: Clearwater drainage, 3,440; Salmon River, 2,173; and Snake River, 50. Four steelhead were reportedly caught from waters we could not identify (Table 2).

Anglers reported fishing an average of 3.8 days per person and an estimated 50,271 angler days were spent fishing for steelhead (Table 3). Fishing pressure estimates by major stream areas were: Clearwater River drainage, 31,443 angler days (exclusive of catch-and-release fishing in fall); Salmon River, 17,273 angler days; and Snake River, 1,555 angler days (Tables 4, 5 and 6).

Idaho residents took 82% of the statewide catch of steelhead (Table 7).

The 1979 fishery provided the third lowest catch of steelhead for the period since 1954 when comparative data became available (Table 8).

Harvest data by fish run year are reported in Table 9 for all runs since 1971-72.

Data reported for the Clearwater River, fall 1979, catch-and-release fishery was very inconsistent with creel census findings reported by Pettit (1980). I believe that the creel census data are much more reliable for the catch-and-release fishery and, therefore I will not report the questionnaire data for the catch-and-release fishery. The consumptive fishery in which it is required for anglers to record their catches apparently provides a more reliable means of recalling catches, compared to the catch-and-release fishery in which catch records are not required.

LITERATURE CITED

Pettit, Stephen W. 1980. Clearwater River Steelhead Investigations. Federal Aid to Fish and Wildlife Restoration Project F-66-R-3. Idaho Department of Fish and Game, mimeo.

IDAHO 1979 SPRING Steelhead Seasons and Regulations

SEASONS

The following waters are open to fishing for steelhead. Waters not specifically designated below shall remain CLOSED to fishing for steelhead.

CLEARWATER RIVER — from the Memorial Bridge at Lewiston upstream to the Clearwater River Bridge at Orofino OPEN to fishing for steelhead January 20-April 15. *Daily bag limit: two fish; Possession limit: two fish; Season limit: six fish.* EXCEPT the shoreline along the perimeter of Dworshak National Fish Hatchery is CLOSED TO ALL FISHING.

CLEARWATER RIVER, NORTH FORK — from Ahsahka Highway Bridge upstream to 300 feet below Dworshak Dam and the west shoreline between the mouth and Ahsahka Highway Bridge OPEN to fishing for steelhead January 20-April 15. *Daily bag limit: two fish; Possession limit: two fish; Season limit: six fish.* Boat fishing prohibited between the mouth and Ahsahka Highway Bridge. Shoreline along the perimeter of Dworshak National Fish Hatchery CLOSED TO ALL FISHING.

SALMON RIVER — from Cove Creek Bridge (1-mile downstream from the mouth of Panther Creek) upstream to a point 400 yards below the mouth of the Pahsimeroi River OPEN to fishing for steelhead January 20-April 1. *Daily bag limit: one fish; Possession limit: one fish; Season limit: two fish.* CLOSED TO ALL FISHING from 400 yards below the mouth of the Pahsimeroi River upstream to 100 yards above the mouth of the Pahsimeroi River.

NOTE

The combined limit for any individual angler who may fish both the Salmon and Clearwater Rivers shall not exceed two steelhead per day or in possession or six steelhead during the spring, 1979 season.

Figure 1. Spring, 1979, steelhead seasons and regulations.^{1/}

1/ Amendment extended the open fishing period for the Clearwater River and North Fork Clearwater River to April 30.

IDAHO 1979 FALL

Steelhead Seasons and Regulations

—SEASONS—

The following waters are OPEN to fishing for steelhead, **October 6 through November 18, 1979.**

Waters not specifically designated below shall remain CLOSED to fishing for steelhead.

***CLEARWATER RIVER** — including Clearwater Arm of Lower Granite Reservoir upstream to the mouth of the South Fork Clearwater River, **CATCH-AND-RELEASE FISHING ONLY** for steelhead, **EXCEPT** the shoreline along the perimeter of Dworshak National Fish Hatchery is **CLOSED TO ALL FISHING.**

***CLEARWATER RIVER, NORTH FORK** — from Ahsanka Highway Bridge upstream to 300 feet below Dworshak Dam and the west shoreline between the mouth and Ahsanka Highway Bridge. **CATCH-AND-RELEASE FISHING ONLY** for steelhead. Boat fishing prohibited between the mouth and Ahsanka Highway Bridge. Shoreline along the perimeter of Dworshak National Fish Hatchery **CLOSED TO ALL FISHING.**

SNAKE RIVER — including Snake River Arm of Lower Granite Reservoir upstream to the mouth of the Grande Ronde River, **CATCH-AND-RELEASE FISHING ONLY** for steelhead. From the mouth of the Grande Ronde River upstream to 400 feet below Hells Canyon Dam. *Daily bag limit: one fish; Possession limit: one fish; Season limit: three fish. All steelhead 28 inches total length or larger must be immediately released unharmed back to the water.*

SALMON RIVER from its mouth upstream. *Daily bag limit: one fish; Possession limit: one fish; Season limit: three fish. All steelhead 28 inches total length or larger must be immediately released unharmed back to the water.*

* In waters of the Clearwater Rivers listed above, only single, barbless hook, artificial lures and flies shall be used **October 6 through November 18** for fishing for all species for which the season is open.

NOTE

The combined limit for any individual angler who may fish the Salmon and Snake Rivers shall not exceed one steelhead per day or in possession or three steelhead during the fall 1979 season.

Figure 2. Fall, 1979, steelhead seasons and regulations.^v

1/ Amendments extended the open fishing period to December 31, and changed the Snake River boundary from the mouth of the Grande Ronde River to Dug Bar.

Issued by SUNSET Vendor No. 6757
 Fishing License Type and No. 03-086334
 IDAHO DEPARTMENT OF FISH AND GAME
 STEELHEAD TROUT PERMIT - \$2.50
No 67-15246 1979
 This Permit Expires Dec. 31,
 ENTER STEELHEAD CATCH BELOW.
 (See instructions on reverse side.)

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		

If no steelhead caught, please mark appropriate box before returning permit.

☐ DID NOT FISH FOR STEELHEAD TROUT
☒ FISHED FOR STEELHEAD, CAUGHT NONE

Complete and return this permit to
 IDAHO DEPARTMENT OF FISH AND GAME
 600 South Walnut St., Boise, Idaho 83707

Figure 3. steelhead permit.

Dear Angler:

We are estimating the number of steelhead trout caught in Idaho in 1979. Your assistance in providing the following information is requested.

If you have already returned your 1979 Steelhead Trout Permit, please ignore this request.

If you have not already done so, please return your 1979 Steelhead Trout Permit in the envelope provided. Also, please take a minute to answer the following questions and return this letter.

How many days did you fish for steelhead in 1979 in these waters?

a. Clearwater River drainage:	_____ days.
b. Salmon River:	_____ days.
c. Snake River:	_____ days.

If you participated in the "catch-and-release" season on the Clearwater River or North Fork Clearwater in the fall of 1979, please answer the following two questions to the best of your recollection.

- a. Number of days fished _____.
- b. Number of steelhead caught and released _____.
-

If you have lost or wish to keep your permit, please enter your catch information at the right.

ENTER STEELHEAD CATCH BELOW

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		

If you caught no steelhead, please mark one box at the right.

☐ I did not fish for steelhead.

☐ I fished, but caught none.

Thank you for your help.

Sincerely,

DEPARTMENT OF FISH AND GAME

Robert L. Salter
Robert L. Salter, Acting Director

EQUAL OPPORTUNITY EMPLOYER

Figure 4. Steelhead catch questionnaire for 1979, first request.

Dear Angler:

To date we have not received your answer to our earlier request for your 1979 steelhead catch information. If you have already replied, our letters probably crossed in the mail so please ignore this request.

We are estimating the number of steelhead trout caught in Idaho in 1979. Your assistance in providing the following information is requested.

If you have already returned your 1979 Steelhead Trout Permit, please ignore this request. If you have not already done so, please return your 1979 Steelhead Trout Permit in the envelope provided. Also, please take a minute to answer the following questions and return this letter.

How many days did you fish for steelhead in 1979 in these waters? a. Clearwater River drainage: _____ days.
b. Salmon River: _____ days.
c. Snake River: _____ days.

If you participated in the "catch-and-release" season on the Clearwater River or North Fork Clearwater in the fall of 1979, please answer the following two questions to the best of your recollection.

- a. Number of days fished _____.
b. Number of steelhead caught and released _____.

ENTER STEELHEAD CATCH BELOW

If you have lost or wish to keep your permit, please enter your catch information at the right.

Date	Stream	Section
1.		
2.		
3.		
4.		
5.		
6.		
7.		

If you caught no steelhead, please mark one box at the right.

☐ I did not fish for steelhead.

☐ I fished, but caught none.

Thank you for your help.

Sincerely,

DEPARTMENT OF FISH AND GAME

Robert L. Salter

Robert L. Salter, Acting Director

EQUAL OPPORTUNITY EMPLOYER

Figure 5. Steelhead catch questionnaire for 1979, second request.

Dear Salmon and Steelhead Angler:

To evaluate the benefits of Idaho's salmon and steelhead program we must estimate the salmon and steelhead sport catch by major river sections and tributaries.

Your cooperation, by recording salmon and steelhead catches by sections and tributaries, is necessary if the evaluation program is to succeed. Please record each fish caught by section listed below.

River Section Where Caught	Mark Permit As:
Snake River, Clearwater River to Salmon River	Lower Snake
Snake River, Salmon River to Hells Canyon Dam	Upper Snake
Clearwater River, mouth to North Fork of Clearwater	Lower Clearwater
Clearwater River, North Fork to South Fork of Clearwater	Upper Clearwater
Salmon River, Mouth to Whitebird Creek	Salmon - 1
Salmon River, Whitebird Creek to Little Salmon River	Salmon - 2
Salmon River, Little Salmon to South Fork of Salmon	Salmon - 3
Salmon River, South Fork to Middle Fork of Salmon	Salmon - 4
Salmon River, Middle Fork to Lemhi River	Salmon - 5
Salmon River, Lemhi River to Pahsimeroi River	Salmon - 6
Salmon River, Pahsimeroi River to East Fork of Salmon	Salmon - 7
Salmon River, above the East Fork	Salmon - 8

Sections listed above refer only to the main stem of each river. Continue to record catches from tributary streams as you have in past years. (Examples: North Fork of Salmon, Lemhi River, Selway River, Marsh Creek, North Fork of Clearwater, etc.)

Thanks again for your cooperation,
IDAHO DEPARTMENT OF FISH AND GAME
Joseph C. Greenley, Director

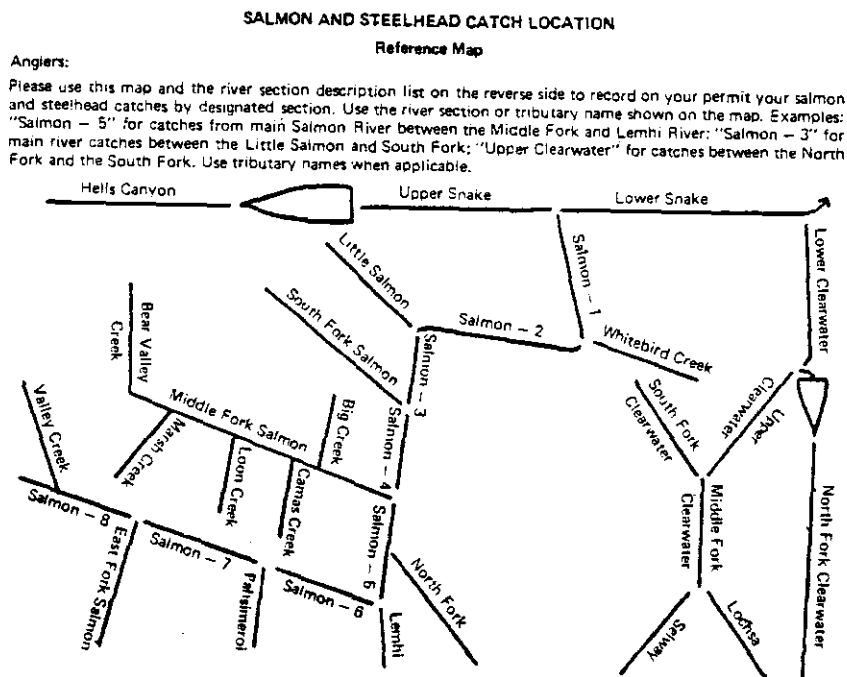


Figure 6. Steelhead catch location reference map.

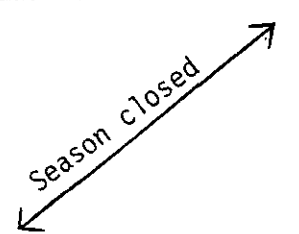
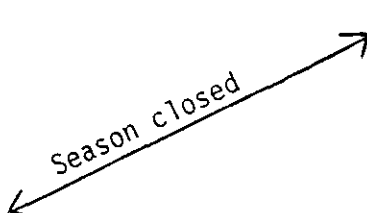
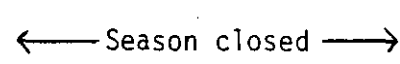
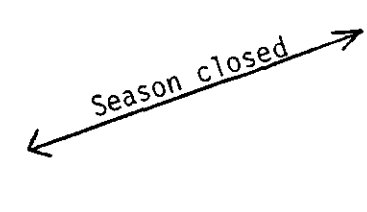
Table 1. Questionnaires and permit data used to compute Idaho steelhead catch estimates for 1979.

-
- (1) 13,078 permits were issued.
 - (2) Random sample size arbitrarily set at 4,584.
 - (3) 3,200 permittees responded by returning permit and/or questionnaire.
 - (4) 3,162 respondents supplied usable information.
 - (5) Sample sizes and expanded estimates:

<u>Category</u>	<u>Number in sample</u>	<u>Percent of total</u>	<u>Expanded totals</u>
Did not fish	795	25.1	3,291
Fished for steelhead	(2,367)	(74.9)	(9,787)
a. Did not catch	1,604	50.7	6,628
b. Caught steelhead	<u>763</u>	<u>24.1</u>	<u>3,159</u>
Totals	3,162	99.9	13,078
Steelhead caught	1,495		5,667
Steelhead per angler ^{1/}	0.58		

^{1/} Does not include permittees who did not fish.

Table 2. Estimated catch of steelhead by month and stream, 1979.

Stream	Jan.	Feb.	Mar.	April	Oct.	Nov.	Dec.	Unknown	Tot
Lower Clearwater	588	414	671	248				476	2,3
Upper Clearwater	21	21	132	79				54	3
N. Fk. Clearwater	4	12	215	253				95	5
Clearwater (unknown)	21	21	66	17				33	1
Subtotal	634	468	1,084	597				658	3,4
Salmon - 1					66	91	50	87	2
Salmon - 2					33	62	50	66	2
Salmon - 3					54	46	33	66	1
Salmon - 4					103	112	21	66	3
Salmon - 5	0	17	141	4	170	290	66	124	8
Salmon - 6	0	8	116	12	12	12	4	21	1
Salmon - 7					0	0	0	8	
Salmon (unknown)	0	0	12	0	37	33	17	62	1
Subtotal	0	25	269	16	475	646	241	500	2,1
Lower Snake					8	4	0	4	
Upper Snake					4	17	4	0	
Snake (unknown)					0	0	0	8	
Subtotal					12	21	4	12	
Unknown streams	0	0	0	0	0	0	0	4	
TOTALS ^{1/}	634	493	1,353	613	487	667	245	1,174	5,6

^{1/} Columns may not total precisely due to rounding.

Table 3. Estimated statewide fishing pressure for steelhead, 1979.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
0	3,291	0
1	1,668	1,668
2	2,133	4,266
3	1,500	4,500
4	981	3,924
5	793	3,965
6	595	3,570
7	227	1,589
8	231	1,848
9	42	378
10	653	6,530
11	47	517
12	131	1,572
13	21	273
14	110	1,540
15	160	2,400
16	21	336
17	21	357
18	38	684
19	13	247
20	198	3,960
21	13	273
22	4	88
23	4	92
24	4	96
25	42	1,050
27	4	108
30	80	2,400
32	4	128
33	4	132
35	12	420
40	13	520
45	8	360
60	8	480
TOTALS ^{1/}	13,078	50,271

^{1/} Columns may not total precisely due to rounding.

Table 4. Estimated fishing pressure for steelhead in the Clearwater River drainage, 1979.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	868	868
2	1,168	2,336
3	847	2,541
4	615	2,460
5	489	2,445
6	371	2,226
7	143	1,001
8	164	1,312
9	34	306
10	405	4,050
11	30	330
12	89	1,068
13	8	104
14	72	1,008
15	97	1,455
16	17	272
17	13	221
18	30	540
19	13	247
20	139	2,780
21	13	273
22	4	88
25	38	950
30	51	1,530
33	4	132
35	4	140
40	13	520
60	4	240
TOTALS	5,743	31,443

Table 5. Estimated fishing pressure for steelhead in the Salmon River, 1979.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	674	674
2	868	1,736
3	590	1,770
4	341	1,364
5	274	1,370
6	194	1,164
7	76	532
8	67	536
9	8	72
10	240	2,400
11	17	187
12	38	456
13	13	169
14	34	476
15	59	885
16	4	64
17	4	68
18	8	144
20	59	1,180
23	4	92
24	4	96
25	4	100
27	4	108
30	25	750
35	8	280
45	8	360
60	4	240
TOTALS	3,629	17,273

Table 6. Estimated fishing pressure for steelhead in the Snake River, 1979.

Number of days fished	Number of anglers	Fishing pressure (anglers x days)
1	126	126
2	97	194
3	63	189
4	25	100
5	30	150
6	30	180
7	8	56
10	8	80
12	4	48
14	4	56
15	4	60
17	4	68
30	4	120
32	<u>4</u>	<u>128</u>
TOTALS	411	1,555

Table 7. Catch of steelhead by resident and nonresident anglers, 1979.

Stream	Resident anglers		Nonresident anglers	
	Number of fish	Percent	Number of fish	Percent
Clearwater River drainage	2,674	77.7	766	22.3
Salmon River	1,929	88.8	244	11.2
Snake River	50	100.0	0	0.0
Unknown streams	<u>0</u>	<u>0.0</u>	<u>4</u>	<u>100.0</u>
TOTALS	4,653	82.1	1,014	17.9

Table 8. Idaho salmon and steelhead catch estimates, 1954-1979.

Year	Chinook salmon catch estimate	Steelhead trout catch estimate
1954	15,000	12,000
1955	19,000	13,000
1956	21,000	8,000
1957	39,000	20,000
1958	24,000	30,000
1959	20,000	31,000
1960	21,000	30,000
1961	13,000	25,000
1962	12,000	19,000
1963	12,000	26,000
1964	8,000	18,000
1965	SEASON CLOSED	20,000
1966	8,500	20,000
1967	6,500	22,500
1968	10,000	23,000
1969	11,500	15,500
1970	5,500	20,500
1971	3,500	17,500
1972	6,500	13,500
1973	9,500	10,500
1974	1,500	3,000
1975	SEASON CLOSED	SEASON CLOSED
1976	SEASON CLOSED	2,000
1977	3,500	13,000
1978	7,000	11,500
1979	SEASON CLOSED	5,500

Table 9. Estimated steelhead harvest by fish run year, 1971-1979 (fish run year is calculated from 1 August to 31 July).

Stream or section	Fish run year							
	1971-72	72-73	73-74	74-75	75-76	76-77	77-78	78-79
Salmon - 1	1,826	1,296	--	--	C.S. ^{1/}	627	837	C.S.
Salmon - 2	1,211	1,345	--	--	C.S.	353	1,039	C.S.
Salmon - 3	1,242	938	--	--	C.S.	354	1,055	C.S.
Salmon - 4	2,004	1,149	--	--	C.S.	710	1,718	C.S.
Salmon - 5	2,606	1,183	--	--	C.S.	711	2,886	162
Salmon - 6	219	76	--	--	C.S.	91	130	136
Salmon - 7	54	15	--	--	C.S.	25	12	C.S.
Salmon - 8	15	21	--	--	C.S.	12	40	C.S.
Salmon unknown								12
Salmon total	9,177	5,963	N/A ^{2/}	N/A	0	2,883	7,717	310
S.F. Salmon	36	61	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
M.F. Salmon	29	27	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
Other Salmon tribs.	65	42	C.S.	C.S.	C.S.	C.S.	C.S.	C.S.
Lower Clearwater	3,317	5,721	--	--	C.S.	C.S.	--	1,921
Upper Clearwater	254	736	--	--	C.S.	C.S.	--	253
Clearwater unknown								125
Clearwater total	3,571	6,457	N/A	N/A	0	0	14,157 ^{3/}	2,299
N.F. Clearwater	--	23	--	--	C.S.	0	--	484
M.F. Clearwater	--	118	--	--	C.S.	0	0	C.S.
Other Clearwater tribs.	--	10	--	--	C.S.	0	0	C.S.
Lower Snake	2,573	2,540	--	--	C.S.	96	--	C.S.
Upper Snake	463	354	--	--	C.S.	50	--	C.S.
SNAKE total	3,036	2,894	N/A	N/A	0	146	1,540	0
Unknown streams	93	219	N/A	N/A	C.S.	66	50	3
State totals	16,007	15,814	8,128	726	0	3,095	23,414	3,096

^{1/} C.S. denotes closed season.

^{2/} N/A denotes data not available.

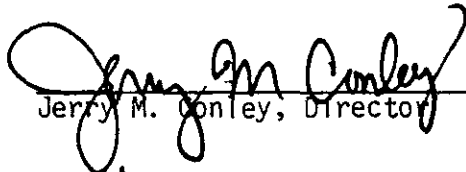
^{3/} Includes mainstem Clearwater and North Fork Clearwater.

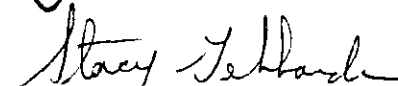
Submitted by:

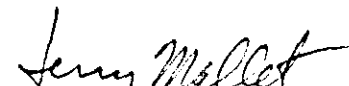
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